

Concerning *Williamia peltoides* (CARPENTER)

BY

JERRY DONOHUE

Allan Hancock Foundation for Biological Research<sup>1</sup>  
University of Southern California, Los Angeles, California 90007

(3 Text figures)

IN THE MAZATLAN CATALOG, CARPENTER (1857 a, p. 202, in the portion dated April 1856) referred to one of the specimens as follows:

"262. NACELLA, ————. *sp. ind.*

Tablet 944 contains a solitary specimen of a *Nacella*, of the shape and size of *Ancylus fluviatilis*, with the apex spirally recurved, and of a dark horny colour. It is not perfect enough for description.

*Hab.* - Mazatlan; off Chama, 1 sp.; L'pool Col."

The material in CARPENTER (1857 a) was then included in a subsequent report by CARPENTER (1857 b).

Somewhat later CARPENTER (1864 a, p. 474; reprinted in CARPENTER, 1872, p. 213) described a new species, the habitat of which was Cape San Lucas, as implied by the title of the paper:

"15. *Nacella peltoides*.

*N.* testa parva, laevi, cornea, subdiaphana, ancyliiformi, apice elevato, valde inaequaliterali, strigis pallidae castaneis radiata; intus nitidissima, subaurantia. Long. .14, lat. .11, alt. .05 poll.

= *Nacella, sp. ind.*, Maz. Cat. no. 262, p. 202."

Shortly thereafter CARPENTER (1864 b; reprinted in CARPENTER, 1872) published "corrections and additions" to a previous report of his (1857) on the Mazatlan shells. Pertaining to no. 262, we find (p. 545; p. 21 in the reprint):

"262. = *Nacella peltoides*, n. s. (described from Cape St. Lucas specimens)."

Moreover, a bit further on (pp. 616 - 618; pp. 102 - 104 in the reprint) CARPENTER lists the new forms collected by Mr. J. Xantus at Cape St. Lucas, remarks that Mr. Xantus "generously presented the first series of molluscs to the Smithsonian Museum," and states that "the new species are described in the 'Annals and Magazine of Nat. Hist., 1864' [i. e., CARPENTER, 1864 a]." Included in the list is:

"*Nacella peltoides*, = *Nacella, sp. ind.*, Maz. Cat., no. 262"

It is clear from the foregoing that: 1) the description by CARPENTER of *Nacella peltoides* was based on specimens collected from Cape San Lucas; 2) the typical dimensions are: long. 3.6 mm, lat. 2.8 mm, alt. 1.3 mm (as obtained from the dimensions given in inches by CARPENTER); and 3) the type (or cotypes) is in the Smithsonian Museum.

DALL (1870) then described and figured (plt. 4, figs. 11 a, b) a species from Monterey which he said he had first called *Nacella? vernalis* in manuscript (in 1866), but which he now considered to be identical with *Nacella peltoides* CARPENTER. DALL assigned this species to the genus *Siphonaria*. The dimensions given are (from inches): long. 12.2 mm, lat. 9.1 mm, alt. 5.8 mm. It should be noted that while the dimensions given by DALL average 3.7 times larger than those given by CARPENTER, the ratios long. : lat. : alt. are quite similar; 1 : 0.79 : 0.4 (CARPENTER) and 1 : 0.75 : 0.48 (DALL). A tracing of the outlines of DALL's figures is given in Figure 1.



Figure 1:

Outline traced from DALL's figures (1870) of *Nacella peltoides*, later separated by him as *Williamia vernalis*.  
Length of shell 12.2 mm.

Somewhat later DALL (1878) removed this same species to the genus *Liriola*, with the Monterey shells

<sup>1</sup> Contribution No. 268.

classified as *Liriola peltoides* var. *vernalis*. (*Liriola* was described as a "section" of *Siphonaria* by DALL (1870, p. 32).)

Considerably later, on the other hand, DALL (1921, p. 67) listed *Williamia vernalis* and *W. peltoides* as distinct species, referencing the former to DALL (1870) and the latter to CARPENTER (1864a). In the "Explanation of Plates" (p. 216) DALL gave:

"*Williamia peltoides* Carpenter, type, long. 10 mm"

referring to fig. 10, plt. 15, and

"*Williamia peltoides* Carpenter, type, alt. 6.5 mm"

referring to fig. 12, plt. 15.

We note first that the specimen figured by DALL cannot possibly be the type, because dimensions given by him are many times the typical, and we note second that it almost certainly is not even an example of *W. peltoides*, because it lacks the radial markings of that species but shows instead strong concentric markings. Furthermore, the length:altitude ratio of DALL, 1:0.65, is much larger than that of 1:0.36 (0.14:0.05) of CARPENTER. Because DALL's figures have been the cause of subsequent confusion, they are reproduced in Figure 2.

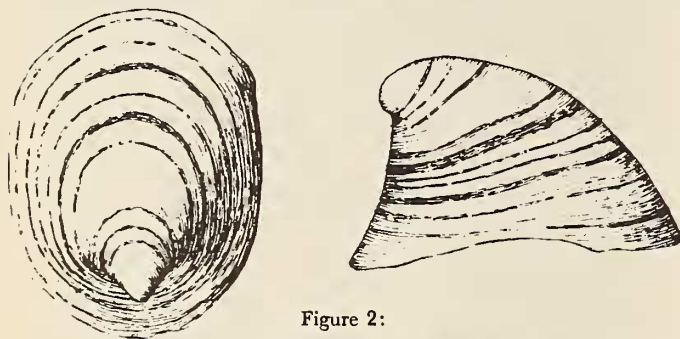


Figure 2:

Figures stated by DALL (1921) to be *Williamia peltoides*.  
Length of shell 10 mm.

OLDROYD (1927, p. 58) republished the description of CARPENTER (1864a) but erroneously gave "No. 263, p. 203" for the Mazatlan Catalog reference, instead of the correct numbers 262 and 202, respectively, stated that the type was in the Liverpool Collection<sup>2</sup>, and reproduced (plt. 2, fig. 17) the dubious Fig. 12 of DALL. Following DALL, she considered *W. vernalis* a species distinct from

<sup>2</sup> A referee has suggested that the citation by OLDROYD of "Liverpool Collection" is not as much of a lapsus as appears at first sight, because throughout the "Mazatlan Catalogue" CARPENTER referred to what is now called the Mazatlan Collection, and which is now housed in the British Museum, as the Liverpool Collection, and that a possible explanation for this is that the collection was first put on sale at the Liverpool Docks, where CARPENTER purchased the bulk of it.

*W. peltoides* and reprinted the description and figures 11 a and 11 b, plt. 5, of DALL (1870).

GRANT & GALE (1931) included *Williamia vernalis* in the synonymy of *W. peltoides*: "Dall's later attempt to assign Carpenter's specific name to the much rarer form with the elevated, somewhat dilated summit and down-curved apex, appears contrary to the facts and must be rejected. . . . It seems probable that there is but one species . . ." GRANT & GALE did not reproduce either of DALL's dubious figures; they did, however, cite them, among others, as pertaining to *W. peltoides*. They also followed OLDROYD in stating that the type was in the Liverpool Collection. In view of the fact, pointed out above, that the dimensions of *W. peltoides* as given by CARPENTER (1864a) closely resemble those of *W. vernalis* as given by DALL (1870), the characterization by GRANT & GALE of *W. peltoides* as having an elevated summit is quite incomprehensible, especially since the height of *W. peltoides* is seen to be relatively less (though probably not significantly so) than that of *W. vernalis*.

BURCH (1945) pointed out that while GRANT & GALE had placed *Williamia vernalis* in the synonymy of *W. peltoides*, he further stated that "it is true the two forms are very close but in our experience the two forms are not taken together which would indicate that they are at least sub-specifically distinct." On the other hand, BURCH included a personal communication from A. M. STRONG as follows: "I believe that *Williamia vernalis* DALL is a good variety of *Williamia peltoides* living under quite different conditions."

In the key of KEEN & PEARSON (1952), DALL's figs. 10 and 12 are reproduced as representative of the West Coast species of *Williamia*. Because it seems likely that *W. peltoides* is the sole representative of the genus in that province, with *W. vernalis* as at most a subspecies if not a mere form or variety, the use of DALL's figures was unfortunate. It should also be pointed out that the key of KEEN & PEARSON contains a flaw in that the genus *Williamia* is keyed as having the "margin of the shell channeled by a radial groove," whereas, in fact, according to OLDROYD (1927), in *Williamia* the "siphonal groove is not visible from the outside, without emargination," and, according to DALL (1870), in *Siphonaria peltoides*, "the siphonal groove is not visible from the outside, nor does it cause any extension or emargination of the edge of the shell."

PALMER's (1958) analysis of the situation led to the conclusion that the type was not, contrary to OLDROYD as well as to GRANT & GALE, in the Liverpool Museum, but rather in the U. S. National Museum. She further stated, regarding the CARPENTER types in the latter museum, that "one cannot believe that those were the shells which DALL illustrated." The two shells in the U. S. National

Museum, with labels in CARPENTER's handwriting, measure, according to PALMER, length 4 mm, diameter 3 mm, and length 1.5 mm, diameter 1 + mm, respectively, and, because the dimensions of the former (No. 4023) approximated those given by CARPENTER (1864 a), she designated it as the lectotype, with the latter becoming a paratype. The illustration of the lectotype was stated to be reserved for a later report. Two additional paratypes were stated to be in the Redpath Museum (McGill University, Toronto, Ontario); the larger of these (No. 1156), with length 4 mm, diameter 3.5 mm, and height 2 mm was figured in plate 25, figs. 15 and 16. Measurement of the figures gives the values length : diameter : height = 1 : 0.86 : 0.39. A tracing showing the outlines only of these figures is given in Figure 3. The later report of PALMER

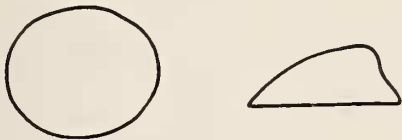


Figure 3:

Outline traced from PALMER's figures (1958) of a paratype of *Williamia peltoides*. Length of shell 4 mm.

(1963) does not, unfortunately, include a figure of the type.

The standard reference work on tropical West American shells by KEEN (1958) includes the dimensions for *Williamia peltoides* given by DALL (1921) together with reproductions of his figures.

Finally, in the most recent standard work on Pacific North American mollusca (KEEN, 1963), the ubiquitous figures of DALL (1921) again appear for genus *Williamia*.

#### CONCLUSION

The reproduction in reference works of DALL's figures which purport to illustrate *Williamia peltoides* is understandable, inasmuch as the paper of DALL (1921) is generally considered a standard source (its awkward arrangement notwithstanding); nevertheless, in view of the facts set forth above it seems likely that DALL's figures do not pertain to that species. Just what DALL was illustrating we hesitate to guess. In any case, PALMER's figures of a paratype, and DALL's (1870) figures of the variety *W. peltoides vernalis*, together with their reprinting in OLDROYD, are available, and should be used by those studying this species.

#### LITERATURE CITED

- BURCH, JOHN QUINCY  
1945. Minutes of the Conchological Club of Southern California 48: 15 - 16. (May 1945)
- CARPENTER, PHILIP PEARSALL  
1857 a. Catalogue of the collection of Mazatlan shells in the British Museum collected by Frederick Reigen. London, xvi + 552 pp.  
1857 b. Report on the present state of our knowledge with regard to the mollusca of the West Coast of North America. Rep. Brit. Assoc. Adv. Sci. for 1856, pp. 159 - 368, publ. 1857.  
1864 a. Diagnoses of new forms of mollusks collected at Cape St. Lucas by Mr. J. Xantus. Ann. Mag. Nat. Hist., ser. 3, 13: 311 - 315 (April), 474 - 479 (June); 14: 45 - 49 (July).  
1864 b. Supplementary report on the present state of our knowledge with regard to the mollusca of the west coast of North America. Rep. Brit. Assoc. Adv. Sci. for 1863, pp. 517 to 686, publ. August 1864  
1872. Smithsonian Miscellaneous Collections, 10. Washington. i - xii; 1 - 325 + index pp. 13 - 121 [includes reprints of CARPENTER 1864 a, 1864 b]
- DALL, WILLIAM HEALEY  
1870. Remarks on the anatomy of the genus *Siphonaria*, with a description of a new species. Americ. Journ. Conch. 6: 30 - 41; pls. 4, 5 (7 July 1870)  
1878. Notes sur la mâchoire et la plaque linguale du *Liriola peltoides*, Carpenter, var. *vernalis*. Journ. de Conchyl. 26, ser. 3: 68 - 73  
1921. Summary of the marine shell-bearing mollusks of the north-west coast of America from San Diego, California, to the Polar Sea, mostly contained in the collection of the U. S. National Museum. Smithson. Inst., U. S. Nat. Mus. Bull. 112: pp. 1 - 217; pls. 1 - 22.
- GRANT, ULYSSES S., IV & HOYT RODNEY GALE  
1931. Catalogue of the marine Pliocene and Pleistocene Mollusca of California and adjacent regions. Mem. San Diego Soc. Nat. Hist. 1: 1 - 1036; 15 figs.; pls. 1 - 32 (3 November 1931)
- KEEN, A. MYRA  
1958. Sea shells of tropical west America; marine mollusks from Lower California to Colombia. Stanford Univ. Press, xi + 624 pp.; illus. Stanford, Calif.  
1963. Marine molluscan genera of western North America: an illustrated key. Stanford Univ. Press; 1 - 126; illust.
- KEEN, A. MYRA, & JOHN C. PEARSON  
1952. An illustrated key to west North American Gastropod genera. 39 pp. Stanford Univ. Press. Stanford, California.
- OLDROYD, IDA SHEPARD  
1927. The marine shells of the west coast of North America. 2 (1): 297 pp.; 22 pls. Stanford Univ. Press, Stanford, Calif.
- PALMER, KATHERINE VAN WINKLE  
1958. Type specimens of marine mollusca described by P. P. Carpenter from the West Coast (San Diego to British Columbia). Memoir 76, Geol. Soc. Amer. i - vi, pp. 1 - 376; pls. 1 - 35. New York, N. Y. (8 December 1958)  
1963. Type specimens of marine mollusca described by P. P. Carpenter from the west coast of Mexico and Panama. Bull. Amer. Paleont. 46 (211): 289 - 408; pls. 58 - 70 (22 October 1963)